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ABSTRACT

Occupational knowledge among high school males from urban and rural areas in eastern Washington was assessed. Over 300 students from a sample of 22 schools were interviewed about occupations present in their region and about job information they had received. Through the use of specially constructed indices (occupational knowledge score, status knowledge scores, salary ranking scores, and salary discrepancy scores), a variety of statistical comparisons were made. The findings indicated little increase in occupational knowledge during the high school years and almost no differences in occupational information possessed by youth from several social class levels. To a limited extent, rural subjects outperformed those from small towns or metropolitan areas of residence. However, occupational awareness did seem to be consistently related to success in school, as was indicated by higher grade point averages. In general, the findings indicated that the formal system of education had done little to insure that the students obtained an adequate understanding of the labor force. It was determined that further systematic studies of occupations should be provided contemporary youth, that the sources from which occupational understandings are drawn should be determined, and that alternative ways for improving the relationship between schools and the labor force must be found. (Author/HBC)

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Learning About The Labor Force: Occupational Knowledge Among High School Males

by

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LEARNING ABOUT THE LABOR FORCE;

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This study assesses occupational knowledge among high school males from urban and rural areas in eastern Washington. Over three hundred students from a sample of 22 schools were interviewed about occupations present in their region and about job information they had received. Through the use of specially constructed indices (occupational knowledge score, status knowledge scores, salary ranking scores, and salary discrepancy scores), a variety of statistical comparisons were made. The findings indicate little increase in occupational knowledge during the high school years and almost no differences in occupational information possessed by youth from several social class levels. To a limited extent rural subjects outperform those from small town or metropolitan areas of residence. HOwever, occupational awareness did seem to be consistently related to success in school as indicated by higher grade point averages. In general, the findings indicate that the formal system of education had done little to insure that these students obtained an adequate understanding of the labor force.

The present study is concerned with the acquisition of occupational information on the part of young men of high school age. Such males are reaching the age when decisions must be made about entering the labor force on a full-time basis. For some, such entry can be briefly postponed through the college years or military service. However, for most, a half-century of involvement in the world of work is about to begin. Under investigation are both the extent of knowledge of such youth about selected occupations and the way in which this knowledge is related to a number of individual and social variables. The findings have implications for understanding the complex relationship that exists between the educational system in a democratic society and the needs of an industrial economic order. This relationship merits brief discussion insofar as it has been the source of both criticism and debate concerning what our schools are doing or should be doing in occupational preparation.

Society and the Labor Force.

Learning about work on the part of the young has always been a matter of significance to society. Plato, for example, in designing his utopian Republic gave a great deal of attention to the training of various levels and kinds of workers in his proposed system. Throughout the development of modern politico-economic institutions, writers have frequently noted the importance of work relationships for such value related issues as the class and power systems of a society. In contemporary terms the way in which citizens enter the labor force and function within it are matters of critical concern. The role system of the labor force is at the heart of the entire economic institution. Indeed, the effectiveness with which the prevailing economic system of a society can bring workers into its labor force, in ways that are satisfying and meaningful to them, while at the same time minimizing unemployment and maximizing productivity, may be one of the most important factors in a nation's survival. In our society, as in others, the individual's job also has vital personal implications. His

position in the labor force dictates his general style of life, important aspects of his self-concept, his childrens' life-chances and most of the relationships he has with others in the community around him (Nosow, 1962). As Hall (1969, p.3) has put it, "The centrality of an individual's occupation to his life is a fact that requires little verification."

Societies differ greatly in the patterns they employ for insuring adequate recruitment for needed occupational roles. In some, the individual has little choice; in others, such as our own, freedom of choice (theoretically) is not limited by rigid cultural tradition or unbending official policy. The limitations on access to occupations that do exist are mainly products of the impact of variables such as race, sex, poverty, ethnicity, etc. on the life-chances of those in specific positions in the social structure. Because of these limitations, and because of the importance of occupation to both the person and the system, the procedures and techniques by which individuals acquire occupational preferences, make job decisions or suffer vocational discriminations that channel their entry into the labor force have long been a matter of scholarly concern.

At an earlier time, the period just prior to entering adult work roles was handled by apprenticeship arrangements or the gradual assumption of parental positions in the labor force. During the last century and a half, however, the democratic society's need for a <u>generally</u> educated citizenry, who can effectively participate in its political process, has led to universal educational requirements that limit the amount of time available for training in <u>specific</u> vocational skills. This conflicting set of needs between the political institution and the economic institution has led to a number of controversies related to the proper role of schools in the preparation of the individual for adult life.

<u>The Role of the School in Occupational Preparation</u>.

Our schools have come under much critical discussion regarding the part they play, or fail to play, in the transition into the adult vocational world. Hall

(1969) and others have voiced concern about the way in which the educational system operates as a "screening agent." There is the obvious fact that some youngsters go much farther in school than others -- with clear implications for who gets what rewards from later adult roles. In this "weeding out" process there is increasing evidence that factors other than ability play a prominent part. For example, Sexton (1961) in an extensive study of urban schools has traced the impact of social class variables in the educational process. Obviously, there are additional factors which operate in our educational system which impede the most qualified from gaining access to higher education and various sectors of the labor force. These limitations are of much concern in a society formally committed to democratic ideals.

Another area of concern has already been suggested -- the fact that the educational system does not really prepare potential workers for specific future roles. Most occupational preparation takes place outside the system of formal education. As far as getting and holding a job is concerned, the curricula, counseling, and training available in schools are inadequate and largely irrelevant. This lack of continuity is recognized by both researchers and high school students themselves. For example, Slocum (1966) has discussed a number of problems in educational preparation for occupational roles and pointed out that (thus far) formal education has contributed little to occupational competence. Perhaps more significant are the results of Stinchcombe's (1964) study of rebellion in high school. He found that the more rebellious students in particular perceived a lack of articulation between high school curricula and their future occupational status.

The role of schools in providing influences on occupational preferences and choices among youth is also unclear. A considerable amount of research suggests that the entry process is based only partically on accurate occupational awareness and rational choice. Moore (1969, p. 872) has described it in the

following way:

> . . . moving toward an adult occupation consists of a complex mixture of narrowing the range of choices (or having them narrowed by poor educational performance); exploration of alternatives by use of information, misinformation, and sheer chance. The availability of reliable information is very uneven.

Thus, students of vocational channeling feel that it is vital not only to unravel the processes through which people choose and enter the occupational world but also to understand the information, misinformation and fantasies which they utilize in this process.

Occupational awareness is not only important in terms of the preferences and choices that guide individuals into specific occupational roles, it also has clear implications for their ability to adjust to role activities of others in the web of relationships around them. Scholars such as Mead (1934) have provided well-known formulations, such as the "generalized other," that symbolize the individual's development of internalized concept of role systems, their attitudes and values. These enable a person to predict the probable responses of people -- to take the role of the other -- in a great variety of situations. Understanding the occupational roles of others may in this sense be as important as understanding one's own. Here again, it appears that our system of formal education plays little part in providing information upon which the individual can develop adequate understandings of the labor force within which he must operate during the major portion of his life.

In spite of its theoretical significance, only a few studies have appeared that attempt to assess occupational understanding, the educational channels through which it is obtained or its rate of acquisition. For example, Weinstein (1958) and Simmons (1962) have investigated how children learn about occupational stratification and prestige. In two previous investigations, L. DeFleur (1966 and 1967) assessed children's knowledge about specific occupational roles,

their ranking and sources of learning. The present research focuses directly on this problem in an attempt to understand how occupational awareness grows during the high school years. Specifically, the study attempts to assess the amount and dimensions of occupational knowledge among high school males. In sections which follow, the findings will be related to a number of their personal characteristics and to aspects of their social milieux. The implications of the data for some of the issues discussed above will be brought out.

The Sample.

The sampling universe was defined as all high schools (n = 128) east of the Cascade Mountains in the State of Washington -- an area comprising more than half the state. Since varying degrees of rural and urban characteristics were desired, the schools were stratified based upon the population of the town in which the school was located. The four strata consisted of metropolitan (over 50,000); town (5,000-49,999); village (1,000-4,999) and rural (under 1,000).

The schools in this universe varied greatly in size. They ranged from student bodies of 1,200 in the most urban area to less than 50 in some of the rural districts. The rural schools covered a large geographical region with a diversity of economic activities and socio-economic levels. For example, in some rural areas, large and prosperous wheat farms predominated. In others, fruit and produce enterprises were concentrated. Still others had mostly livestock ranches. In order to tap this diversity, a rather large number of rural and village schools were sampled with a relatively small number of interviews per school.

In the town, village, and rural strata, each school was numbered. Using a table of random numbers, the specific schools within each were selected (plus two alternates for each). Three town, six village, and ten rural schools were selected to represent these strata. These schools were widely dispersed over the eastern half of the state and effectively spanned the variety of the rural

areas noted above. However, distances between schools were great and a substantial amount of travel was necessary to complete the interviewing.

There is only one metropolitan area (over 50,000) in eastern Washington, (Spokane) with 12 schools in its district. Since a range of socio-economic levels was needed in the sample, and since urban schools tend to be rather homogenous in their composition, a different sampling procedure was used to aid in achieving representation. Prior to final selection, various characteristics of the city and schools were studied in consultation with school authorities. Three specific metropolitan schools were selected to represent the range of the city's socio-economic levels.

Within each of the 22 schools finally included in the sample, male students were selected on the basis of a systematic design using a random start. In each school, several alternates were drawn to be used as substitutes when there were absences or other unavailabilities. However, loss in the original sample was very low (approximately three per cent). The total number of usable, completed interviews was 323 and approximately one-third of these were from each type of area in the eastern part of the state -- metropolitan (118); town (104); village and rural (101).

The subjects selected could be characterized generally as sons of a residentially stable, predominantly Anglo-Saxon population. Ninety-two per cent reported that they had lived in their place of residence for more than two years. Two per cent were nonwhite, a percentage which coincided with the proportion of nonwhite population reported in the most recent census for this section of the state. Approximately twenty-five per cent of the subjects were drawn from each of the four grade levels in high school (9 through 12). However, the ninth grade is slightly under-represented because a few of the high schools did not include it. Overall, the two-stage stratified sample appears to be quite representative of the population of such youth in this geographical area.

Excellent cooperation was obtained from high schools involved in the study. Only one school of the initial twenty-two refused to participate and was replaced. Several factors probably were responsible for the high level of cooperation. Most of the principals indicated a great deal of interest in the general aims of the project, particularly since they were promised (and sent) a brief summary of the results. The interviewing was organized so as to coincide with school periods, and relatively small numbers of students were questioned in any one school. Disruptions for the schools and students were kept at a minimum. Finally, no "sensitive" questions, (e.g., income, sex, religion, etc.) were included in the schedule and anonymity of subjects was assured. Thus, little loss occurred in either the sample of schools or students.

Assessing Occupational Knowledge.

Assessment of the amount, quality, and accuracy of occupational information possessed by young men is a difficult task. While a number of standardized tests exist which attempt to determine a person's interests and aptitudes, these, of course, are aimed at different aspects of the problem. For measuring occupational information, only a few instruments have been developed. The Center for Research in Occupational Planning of the University of Oregon has designed an occupational information survey (Acker and Goldman 1967). This instrument requires the subjects to do three tasks in a specified time period -- list job titles, list job activities, and match the two lists. While this procedure probes some of the more general dimensions of occupational information for a large number of jobs, it was not regarded as suitable for the present project. An in-depth exploration of specific role knowledge was needed for a lesser number of carefully selected occupations. Thus, it was decided to focus on a more limited list of jobs and probe more deeply into various aspects of occupational information through a structured interview. In pretesting, it was determined that no more than seven or eight specific occupations could be

covered in approximately one hour. Due to the time limits of typical school periods and the attention span of the subjects, this was considered an appropriate interview length.

Selection of the occupations included in the instrument was guided by two main considerations. First, the occupations had to be well represented in the labor force of the state and, in particular, its eastern region (U.S. Census 1963, pp. 288-294). Second, occupations from the major socio-economic levels of the labor force were to be included (U.S. Census 1966, pp. 15-17). The occupations selected on the basis of these criteria were: engineer, accountant, salesman, mechanic, carpenter, local truckdriver, and sawmill worker.

After experimenting with various forms of a structured interview during the pretest, the content and order of the schedule were designed. The first section obtained background data from each respondent. Questions were then posed concerning the amount and type of information about jobs the subject had received from various sources. The subject was asked whether he had any ideas about his future occupation (ten years hence). Most interviewees indicated such an occupational choice. Next, a series of items was presented about each of the seven test occupations. These questions were designed to elicit "factual" information about the normative obligations and concrete work tasks of each occupational role. After each question, space was provided for the verbatim recording of responses. Using "mechanic" as an example, the following items were asked for each of the occupations:

(1) What are the general kinds of work done by most mechanics?

(2) Do most mechanics work for someone, work independently on their own, or both?

(3) Name as many specialized types of mechanics as you can.

(4) How much formal education do mechanics need? Are there any other types of training or qualities which mechanics would need?

(5) What do you think is going to happen to the demand for mechanics

in the next ten years?

After each of the above items had been completed for each of the seven occupations, the interviewees were asked the same series of questions about their "chosen" occupation (mentioned above). If the respondent had not indicated an occupation of choice, the interviewer proceeded directly to the last part of the schedule. This section was designed to measure the subject's knowledge of prestige ranking of the seven test occupations. The student was given a set of seven cards. On each was the name of one of the seven test occupations. He was asked to place the cards in a column with the "most important" at the top with the others ranked down to the "least important." (The subjects were allowed to tie ranks if they so desired.) The interviewer recorded the rankings, picked up the cards, and shuffled them thoroughly. As a final task, the interviewee was asked to go through the set of cards one by one and indicate what average level of salary on a yearly basis was prevalent for each of the occupations. Each salary estimate was recorded. In an attempt to minimize possible serial effects, the order of presentation of occupations for each task was rotated from subject to subject.

In the four urban schools, high school counselors were used as interviewers because administrators felt it would minimize disruptions in the schools. The counselors were paid on a per interview basis and participated in several training sessions. (Interviewers for the rural and town schools were the principal investigator and several sociology graduate students.) Overall, no major problems were encountered with the instrument or the interviewing procedures.

Coding: The main tasks in coding the occupational information interviews were to assess the accuracy of and assign numerical scores to the subjects' responses to the various questions on the test occupations. Model or "factual" answers to the questions were constructed from discussions of each occupation in the Occupational Outlook Handbook (1968-1969) published by the U. S. Labor Department. [Sawmill workers were not covered in this source so a number of local publications were

consulted.] Specific points were assigned according to how well the subjects' responses matched the model answers. It was possible for the respondents to earn between four and six points if they fully and accurately outlined the "kinds of work" done in a particular role. Correct answers to the remaining questions about a given role were worth two or three points each depending upon accuracy and completeness. Thus, the total possible points on the occupations ranged from 16 points for the engineer to 13 points for the carpenter. There was variation in the total points for each occupation because some of the roles were more complex than the others. This procedure reflected discussions in the Occupational Outlook Handbook. For all seven occupations the total possible points was 101.

Construction of Indices: Two indices of occupational knowledge were constructed for each subject. A "proportional role score" for each occupation was computed, based on the per cent of "possible" points that was earned on each. In addition, an overall or total proportional score was computed, based upon the per cent of the total 101 points earned. The present analysis focuses mainly on the overall proportional role score. For simplicty, this will be called the occupational knowledge score. Intercorder reliability on the occupational knowledge score was checked for 52 randomly selected interview schedules ($r = .945$).

Three additional indices were constructed to summarize other aspects of occupational information. The first was based upon the prestige rankings of the occupations. It will be recalled that each respondent was asked to rank the seven occupations in terms of their prestige. This ranking was then compared to an "official" ranking based upon Duncan's Socioeconomic Index (Duncan 1961). A gamma value for each subject was computed to compare the two sets of rankings. This comparison was called a status knowledge score.

Information on salary levels in the various occupations in the state was obtained from the State of Washington Department of Labor and Industries. This office regularly compiles salary information for various sections of the state and

was very helpful in supplying the necessary information. Thus, "actual" average annual salaries (rounded to the nearest hundred dollars) were obtained for the test occupations. Two indices were constructed using this information. For one, the subject's salary estimates were ranked from highest to lowest -- ignoring how close his estimate was to the actual salary. Then his ranking was compared to the ranking based upon actual salaries in the occupations. Gammas were computed for these rankings. This index was called a salary ranking score. The salary estimates for each occupation were also subtracted from the actual salaries. This + or - figure was recorded for each occupation and was used to group respondents into categories that can be termed "over," "under," or "near" salary estimators. In addition, a summarizing measure was needed. The salary discrepancies noted above were added up (ignoring direction) and divided by the number of estimates This average was labeled salary discrepancy score.

Since the several indices noted above are very different from each other, a method of comparison was needed in order to use them in meaningful ways in the analysis. The occupational knowledge socres, status knowledge scores, salary ranking scores, and salary discrepancy scores were all converted to standard scores (or T scores) with a mean of 50 and a standard deviation equal to 10 (Lindquist 1942, pp. 149-152). In order to make the resulting standardized salary discrepancy scores comparable to the others, a simple transformation was needed to reverse this particular scale. [Each was subtracted from 100.] Thus, it was possible to compare directly the several indices obtained from the interview data.

Background data were gathered on each respondent; part of this was information pertaining to each subject's social class level. Descriptions of the occupations of both the mother and father were obtained and recorded on the interview schedule. This information was then coded according to Duncan's Socioeconomic Index. Intercoder reliability on the assignment of the father's socioeconomic score was

checked on 51 randomly selected cases (r = .918).

A social class index was computed for each family. This index utilized the father's and mother's occupational and educational levels. It was computed in the following way: The sum of the father's occupation (times one), father's years of education (times one), mother's occupation (times .5), and mother's years of education (times .5) was divided by three. If the mother was not employed, then the sum was divided by 2.5 to avoid distortions. The resulting "weighted social class index" could only be computed where all the factors were given, so there was some loss of cases, yielding 286 complete cases out of the sample of 323. The social class index values were transformed to standard scores. Two additional interval-level background factors were also transformed to standard scores -- age and grade point average. Thus, all major variables in the analysis were standardized for comparability.

Major Dimensions of Occupational Information.

The overall occupational knowledge score for all categories of subjects was quite low. The proportional (raw) score averaged over all seven occupations was 46.66 [out of a possible 100 per cent]. This indicates that the young men were able to discuss less than half of the relevant points about seven common occupations in their section of the state.

However, the data indicate that this information was unevenly distributed among the various occupations. The respondents had more knowledge about lower socio-economic work roles than higher ones. For example, the average proportional knowledge scores were as follows: local truckdriver, 57.51; mechanic, 54.22; carpenter, 48.11; salesman, 46.48; sawmill worker, 43.23; engineer, 39.61; and accountant, 37.46. It was clear from comments and discussions with students that higher level occupations such as engineer and accountant were often poorly understood and were not very "visible" to most subjects.

It appears in general that the young men possessed a good understanding of

prestige rankings of the seven occupations. The mean rank assigned to each occupation was computed in order to summarize roughly the prestige levels assigned to each occupation. Engineer was ranked at the top, followed by accountant. Even though these two occupations were the least well understood in terms of the specifics of the job tasks, their prestige dimensions were clearly perceived. This is substantiated when the salary figures assigned to engineer and accountant are examined. On the whole, these two occupations were assigned the largest and second largest salary figures among the seven occupations.

The lower end of the prestige scale was quite well understood. The two lowest status assignments were the local truckdriver and sawmill worker. The interviewees also placed these two at the bottom in terms of salary estimates. The middle-level occupations of salesman, mechanic, and carpenter received quite similar average placements in between the top and bottom. The average rankings of these three were somewhat different from the ranking they would receive according to the Duncan Socioeconomic Index. In particular, salesman was evaluated the lowest of the three in both prestige and salary. According to the Duncan Index as well as state salary levels, it should have been higher. Overall, the subjects did very well on the prestige dimensions; probably adults would not have been more accurate in placing middle-level occupations.

Another dimension of occupational information is salary estimates in dollars per year for the seven occupations. There was an enormous range in these estimates from less than a thousand dollars a year to close to two hundred thousand. However, a large number of the respondents gave realistic estimates. To get some picture of how close most of them were to the "actual" salary figures (average paid in the state), the per cent who estimated salaries within $2,500 of the actual figures was computed. Again, it appeared that there was less information concerning the engineer and accountant. Only 32 per cent of the estimates for the engineer were within $2,500 of the actual average salary and 50 per cent were within this range

for the accountant. This can be compared to 63 per cent who accurately estimated salaries for the local truckdriver and 63 per cent who were close to the salary for sawmill worker. Thus, a sizable proportion of the respondents were able to make fairly realistic salary estimates for the two occupations in the lowest socio-economic level. The per cent who estimated close salaries for the middle occupations was between the two extremes.

Generally, the young men in this study had a rather poor understanding of the occupational roles and prevailing salary levels. However, they had a much clearer grasp of prestige rankings. While these results pertain to the subjects as a whole, there were notable differences among sub-categories.

Subject Characteristics and Indices of Occupational Information

From earlier research by the author, it was hypothesized that knowledge about occupational roles, their prestige, and salary would increase regularly with age. In studying children of ages 6 to 13, for example, there was a definite increase year by year in their understanding of a wide variety of occupational roles (DeFleur and DeFleur, 1967). This was not the case in the present study. The findings clearly indicate that among these subjects the acquisition of occupational information leveled off during the high school years. That is, after about age 14 or 15, not much additional occupational information was acquired. Since this is an important potential conclusion, the data upon which it is based merit detailed examination.

The respondents were grouped into the following age levels: 14-15, 16, 17, and 18-19. Means for these categories were computed for the various indices of occupational information. The significance of differences between means was tested for all age level pairings using two-tailed tests. In comparisons on status knowledge, salary ranking, and salary discrepancy the average scores (shown in Table 1) for all age groupings on these indices were very similar; none were significant at the .05 level.

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Table 1 about here

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Comparisons on occupational knowledge scores showed some significant differences. These were mainly at the extremes. When the 14-15 year olds were compared with older categories, the 17 year olds and the 18-19 year olds had means that were significantly higher (at the .05 level and .01 level respectively). Since the N's are quite large in these comparisons, only small differences are needed for significance. As can be seen by the standard score means in right side of Table 2, there is only a very modestly increasing trend over the four years. (These means are presented graphically in Figure 1.) For practical purposes, the trend is nearly flat.

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Table 2 and Figures 1 and 2 about here

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But what does this all mean? If very little occupational learning takes place during the four years of high school, when do such youngsters learn about the occupational world? Previous research suggest a possible answer. A study conducted with children aged 6 to 13 strongly suggests that much learning about occupations takes place during these earlier ages (DeFleur and DeFleur 1967). This hypothesis can be examined by comparing some of the results from the previous research (left side, Table 2) with those of the present study (right side, Table 2). There are, of course, differences in the measuring instruments, sample design, etc. of the two studies. Therefore, interpretations must be tentative. However, to increase the comparability of the results, occupations test scores and means from the earlier research were converted to standard scores following the same procedures that were used with the current data.

The means for each age level from the earlier study are graphically portrayed on Figure 2. If Figures 1 and 2 are considered together, they strongly suggest

a "leveling off" in the acqusition of occupational information during the high school years. While both common sense and theoretical reasoning would tend to predict a continually rising knowledge curve, the data clearly show a flattening trend. Some of the possible reasons for this leveling off will be explored in the discussion section. But first, what other results emerged?

Another subject characteristic which can potentially influence the acquisition of occupational information is socio-economic status. Prior research has been somewhat controversial on this issue. However, to explore the possibility that higher socio-economic strata had greater job awareness than lower strata, the following analysis was performed.

As was discussed earlier, a social class index was computed for each family based upon father's and mother's occupational and educational levels. The distribution of these scores was studied and divided into three strata based upon a natural clustering. Level I (N = 53) consisted of families with professional, technical, or higher managerial occupations, whose adults generally had at least a college education. Level II (N = 116) contained craftsmen, foremen, sales or clerical workers and some managers and proprietors. Here, adult educational attainment ranged from those with some high school to those with some college. Level III (N = 117) ranged from laborers (some skilled) to some of the less skilled operatives. The amount of adult education in this stratum varied from some high school to high school completion. Most of the farm families in the sample were placed in this lower level. This is due in part to the low Duncan Socioeconomic score that is assigned to farmers (both owners and tenants). Some farm families in this sample undoubtedly would have been placed considerably higher if family income had been a part of the index. In sections of rural eastern Washington covered by the sample, there are a number of wealthy wheat farmers with many material amenities; in some cases including private airstrips and planes. Overall, the social class level of the sample ranges from working

class to upper middle, without representation of the very poor at the bottom or the very wealthy at the top. This somewhat restricted social class range undoubtedly has had an impact on the results of the study. Dramatic differences between the three levels were not anticipated.

The significance of the difference between each possible pair of means of the three social class levels was tested on all four occupational information indices. In the 12 comparisons, there was only one result of modest significance. Thus, the results basically show no difference in levels of occupational information between the three socioeconomic levels.

There were differences between the social class levels on knowledge about specific occupations. The lowest level (III) had significantly higher knowledge socres than the highest level (I) on four occupations. These were the occupations toward the lower end of the socioeconomic scale -- sawmill worker, local truck-driver, mechanic, and salesman. These are the same occupations that were more fully understood by the sample as a whole. Apparently they are most visible and most understood by youth in the lower social class level. However, the reverse was not true. The higher social class subjects did not possess more knowledge about the higher status occupations.

Residence was also considered as potentially important in the development of occupational knowledge. As was already indicated, the present sample was designed to include approximately equal proportions of youth from rural areas, towns and a metropolitan area. Results from other research suggested that rural youth would not possess as high a level of occupation information as those from towns and metropolitan areas. For example, Sewell's (1965) extensive study of educational and occupational aspirations of Wisconsin youth indicated that the educational and occupational plans and aspirations of rural youth were low in comparison with those from more urban areas. In the same article, a strong plea was made for more occupational programs and guidance because it was felt that

the rural students knew less about opportunities. Thus, it was hypothesized that the metropolitan segment of the present sample would score the highest on the four indices, followed by the town and rural subjects in that order.

Comparisons between the possible pairs of means were made through tests of significance. There were no significant differences between the three residential groups on status knowledge, salary ranking knowledge and salary discrepancy scores. However, the results on the occupational knowledge scores were rather surprising. The rural youth did significantly better than both the metropolitan (P=.001) and the town (P=.01) youth. When these differences were examined in greater detail through comparisons of knowledge scores on specific occupations, the rural youth consistently outperformed one or both of the other categories on five of the seven occupations. In particular, the scores of the rural subjects were significantly higher on engineer and accountant -- the two occupations that in general were the lowest for other subjects. Some possible reasons for these findings will be covered in the discussion. However, one meaningful factor may be that the rural interviewees had significantly higher grade point averages than metropolitan subjects.

Grade point averages were obtained for the entire sample. These G.P.A.'s were converted to standard scores. Quartiles of the distribution were calculated. These four quartiles provided the main categories for a variety of analyses. Before proceeding with this, however, the relationship of G.P.A. to other subject characteristics was examined. As pointed out above, the rural subjects had a significantly higher average G.P.A. This is congruent with Sewell's (1965, pp. 159-160) findings in Wisconsin.

In the present study, when the three social class levels were examined for possible differences in G.P.A., none were found. The same was true in the comparisons of age groups. Thus, there did not seem to be an unusual concentration of a particular G.P.A. level in any single category -- with the rural exception

noted above.

The means of all four occupational information indices for each of the G.P.A. quartiles were compared to each other. On occupational knowledge, status knowledge and salary ranking knowledge the upper G.P.A. categories (I and II) scored significantly higher than the lower levels (III and IV). There were no such differences on the salary discrepancy index. The probabilities of these difference of means tests are presented in Table 3. Eleven of the twenty-four tests were significant at the .05 level or higher.

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Table 3 About Here
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An additional analysis was performed on the salary discrepancy information. For each of the seven occupations the plus and minus salary estimates which had been subtracted from the "actual" salaries paid in the state, were used as a basis for grouping subjects into categories which were identified as "over-estimators," near-estimators," and "under-estimators." Thus, each subject was so identified on each of the seven occupations. An under-estimator (N=68) was a subject who fell in the lowest quartile of such a distribution; the near-estimators (N=167) were the middle two quartiles and the over-estimators (N=80) were in the highest quartile. Three cases were omitted because of unrealistically large estimates (over $200,000 for every occupation); five cases failed to give estimates for all occupations. (Thus, total N=315).

Proceeding occupation-by-occupation, mean G.P.A.'s were compared for subjects who had been classified into the three estimator categories. This resulted in 21 comparisons of means. Of these, ten were significant. Table 4 summarizes the findings, presenting information only for those comparisons that resulted in significant differences. The major finding from this analysis is that only the middle category, the near-estimators, had higher G.P.A.'s in one or more of the comparisons for every occupation. Thus, the more academically successful subjects were able

make more accurate salary estimates than those with lower G.P.A.'s (See Table 4).

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Table 4 About Here

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Another indication of the better performance of the higher G.P.A. group was evident in an examination of the proportional role scores for specific occupations. The respondents with higher G.P.A. scores (quartiles I and II) had significantly higher roles scores on the three occupations which were most difficult to understand for the overall sample. Table 5 summarizes the probabilities of the differences in comparisons of mean role scores for four G.P.A. quartiles on the occupations of engineer, accountant and salesman. In the eighteen differences of means tests computed, the higher G.P.A. youth were significantly better in nine. Thus, in the majority of the analyses subjects with higher G.P.A.'s outperformed their less scholastically able classmates.

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Table 5 About Here

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The main findings from the data can be briefly summarized in the following four points. First, there was very little increase in occupational knowledge from the youngest age level (14-15) to the oldest (18-19). Second, there were almost no differences in occupational information possessed by youth from lower social class origins and those from higher in the social class structure. Third, on some occupational information indices, rural subjects outperformed small town and metropolitan interviewees. Fourth, in all comparisons those subjects with higher grade point averages significantly outperformed those with lower scholastic attainment. But what are some possible interpretations of such findings?

The high school period is one of great importance because it is during this time that young people must make decisions which will have a tremendous impact on future occupational directions. Thus, it was hypothesized that the older high school males would be particularly perceptive of occupational information. However, it is also during these high school years that "adolescent subcultures" assume great importance for youth in our society, isolating them from other concerns. As Coleman (1961) and others have pointed out, these subcultures typically place low valuation on activities and goals that are emphasized by the adult world. Acheivement in school and systematic preparation for work roles have low priorities in such subcultures. Thus, from the point of view of high school males it may be more important to focus attention on cars, cigarettes and sex than dimensions of the adult occupational world.

The general sociological literature on class differentials in achievement and status mobility suggested that youth from higher social class levels would be better informed than those in lower strata concerning the occupational world. For example, the DeFleur study (1967, p. 785) of younger children and found that middle and upper class children knew more about the jobs under study and were better able to assign social rankings to occupations. Such was not the case in the present research. One possible interpretation of this finding is that the

population from which the present sample was drawn did not provide enough variation in social class levels to test the hypothesis adequately. The sample in the earlier investigation included families below the lowest social class level of the present sample. Another possibility is that while the importance of achievement and mobility is stressed in many middle class homes, accompanying occupational information is not provided. In these homes, the occupational role of the father (or of most other adult males) may not be visible. Thus, the family may not provide emphasis on occupations or specific information about them. Krause (1971, p. 37) has also suggested the same idea--middle class homes may convey high aspirations but not skills. This needs to be investigated.

The fact that rural youth outperformed other residence groups in this study is also contrary to most previous research. Sewell (1965) and others have pointed to the less adequate educational and occupational plans and opportunities of young people from rural areas. However, a 1965 study of rural students in Washington by Walter Slocum (1967) provides different findings. Slocum found that levels of educational aspirations and expectations among farm students were not lower than those of nonfarm students. He suggested that rural Washington students seem to understand the need to leave farming and the concomitant need for education in attaining occupational success. In addition, Slocum speculates that Washington rural families may be distinctive -- both economically and educationally. A large proportion consist of unusually well-educated and successful farmers. Thus, it should not be surprising that their offspring are relatively bright and apparently more occupationally perceptive.

The statistical comparisons which produced the most consistent findings were those which used grade point averages. These findings seem simple to interpret--young people who are bright and are doing well in school are better able to grasp ideas from the occupational world. Other investigators have found similar results using the same and different indicators. For example, Slocum (1966, p. 221) found

that educational and occupational aspirations were higher among those youth who had higher grades. Nelson (1963, p. 747) found the amount and accuracy of occupational knowledge was higher among youth of higher intelligence levels as measured by school intelligence tests. However, more important than ability to grasp ideas may be the possibility that higher performance in school indicates more concern with the future. (Stinchcombe, 1964) Such youth undoubtedly would be more perceptive to occupational information.

Overall, therefore, occupational awareness in the present sample seems related to scholastic success and, to a limited degree, residence, but to very little else. In particular, the number of years spent in high school seems to have little to do with one's understanding of the specific occupational tasks, salaries and prestige of the jobs under study. This conclusion merits discussion.

School as Transmitter of Occupational Knowledge

In an attempt to uncover the full extent to which the school had been active in transmitting information about the world of work the subjects were asked about the sources and types of information about jobs that they had received -- excluding parents and friends. Only 33 per cent (106 of 321 interviewees) indicated that school counselors had on some occasion discussed the occupational world with them. There were 21 who described school functions, such as "career days," an additional 23 described some classroom work that had provided occupational information. The remaining 22 interviewees had been involved in a variety of both school and community activities which gave them some vocational awareness. Certainly, the majority of the young males under study (67 per cent) indicated that they had not received any recent information about occupational matters. Thus, the schools in this study appeared to be doing very little toward the preparation of their students for entering occupational roles.

The fact that the schools were only marginally involved in transmitting occupational information is consistent with prior observations. Moore (1969,

p. 873), has summed up the situation in the following way:

> The school is most clearly adapted to preparation for dealing with ideas, and thus for occupations with a substantial intellectual content. Dealing with people may be learned essentially as a by-product of the circumstance that the school is a social organization. Dealing with things may be partially trained through vocational curricula in secondary schools, but in effect 'shop' courses serve more nearly as custodial day-care centers for potential delinquents than as genuinely educational enterprises. Thus both as a sorting and as a socializing agency, the school treats these occupational dimensions with a very uneven hand.

The reasons behind this lack of attention to occupational preparation are by no means clear and warrant further exploration.

Implications

The lack of integration between schools and the labor force can be interpreted in several ways. It would be simple to begin with the assumption that the schools "should" provide young people with more specific information and training for the occupational world. There are cogent reasons why such an assumption appears to be valid. The well-being of the individual is certainly at stake. Substituting a thoughtfully developed base of systematic information about occupations and their social correlates for haphazard and often incorrect information that young people now acquire might lead to more intelligent and realistic occupational aspirations, preferences and choices. Through the development of curricula specifically concerned with occupational awareness, both the society and individual could be more confident of orderly and rational transitions between education and occupation. For the society, a labor force recruited on the basis of intelligently made choices undoubtedly would be more productive and harmonious than is sometimes the case at present.

However, the benefits of integrating the educational and economic institutions more fully in our society may have costs that are incompatible with democratic values. For example, if occupational instruction more closely geared to the needs of the industrial system were widely introduced into schools, it could result in even more rigid "screening" and "tracking" than is the case at present,

particularly for those lower in the class structure. Furthermore, in an era when many are concerned that our society is becoming more dominated by the "power elite" of the "military industrial complex," the lack of integration now prevailing between school and labor force may be functional. That is, it may decrease the danger that schools will become an efficient means for feeding trained manpower into the system of production with a corresponding loss of freedom of choice for the individual.

The real challenge in relating the school to the labor force lies in designing techniques for increasing occupational awareness but at the same time retaining a maximum of personal opportunities and freedoms. The present research, of course, cannot resolve such issues. It can, however, point to the need for further systematic study of contemporary youth, the sources from which occupational understandings are drawn, and alternative ways for improving the relationship between schools and the labor force.

TABLE I

Mean Status Knowledge, Salary Ranking and Salary Discrepancy Scores for Age Groups (Standard Scores)

Age	Status Knowledge	Salary Rank Knowledge	Salary Discrepancy
14-15	48.53	48.99	49.79
16	50.66	50.75	50.76
17	50.85	50.83	48.95
18-19	49.41	48.84	48.71

TABLE 2

Mean Occupational Knowledge Scores For
Younger and Older Subjects (Standard Scores)

Earlier Study			Present Study		
Age	N	Mean	Age	N	Mean
6	29	39.25	14-15	68	47.48
7	37	42.78	16	96	49.41
8	44	49.49	17	91	51.06
9	42	51.27	18-19	68	51.94
10	35	54.87	Total	323	50.00
11	34	56.63			
12-13	15	60.11			
Total	236	50.00			

TABLE 3

Probabilities of Differences of Mean G.P.A.'s
for Indices of Occupational Information

Comparison of G.P.A. Quartiles	Occupational Knowledge	Status Knowledge	Salary Rank Knowledge	Salary Discrepancy
I-II	.05	.05	>.10	>.10
I-III	.01	>.10	>.10	>.10
I-IV	.001	.001	.01	.05
II-III	>.10	>.10	>.10	>.10
II-IV	.05	>.10	.05	>.10
III-IV	>.10	.05	.05	>.10

TABLE 4

G.P.A. Means of Salary Estimators by Occupation (Standard Scores)

Occupation	Over Estimators	Near Estimators	Under Estimators	P of Difference
Engineer		50.84	47.57	.05
Accountant		51.55	48.52	.05
Salesman		51.10	47.03	.01
Mechanic		51.65	48.41	.05
Carpenter	47.98	51.90		.01
		51.90	48.48	.05
Truckdriver	48.38	51.75		.05
		51.75	48.95	.05
Sawmill Wkr.	49.03	51.61		.05
		51.61	48.68	.05

TABLE 5

Probabilities of Difference of Mean G.P.A.'s

For Three Occupational Roles

Comparisons of G.P.A. Quartiles	Engineer	Accountant	Salesman
I-II	.05	>.10	.01
I-III	.01	.05	>.10
I-IV	.001	.01	.01
II-III	>.10	>.10	>.10
II-IV	.05	.05	>.10
III-IV	>.10	>.10	>.10

FIGURE 1

MEAN OCCUPATIONAL KNOWLEDGE
(Standard Scores)

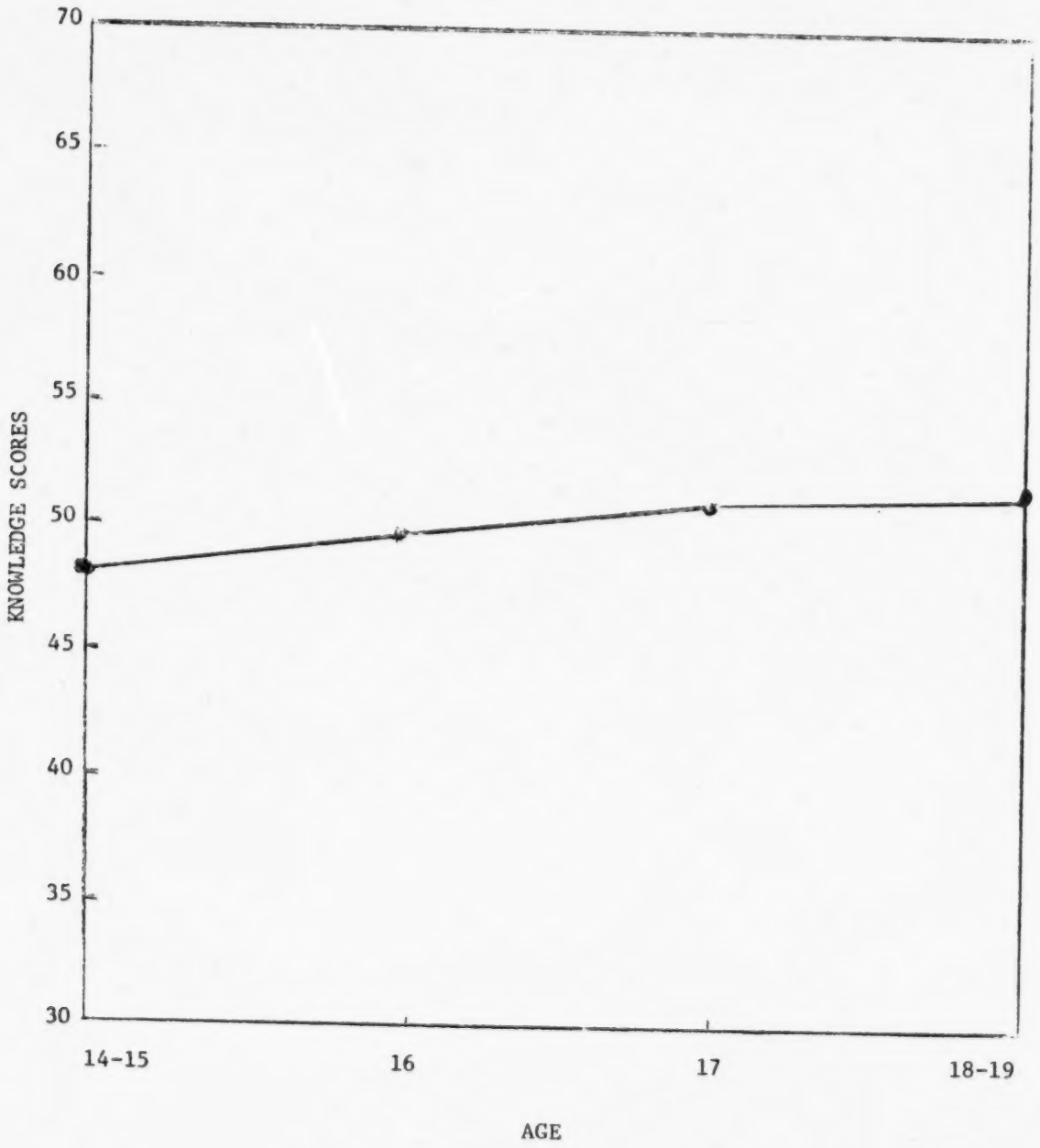
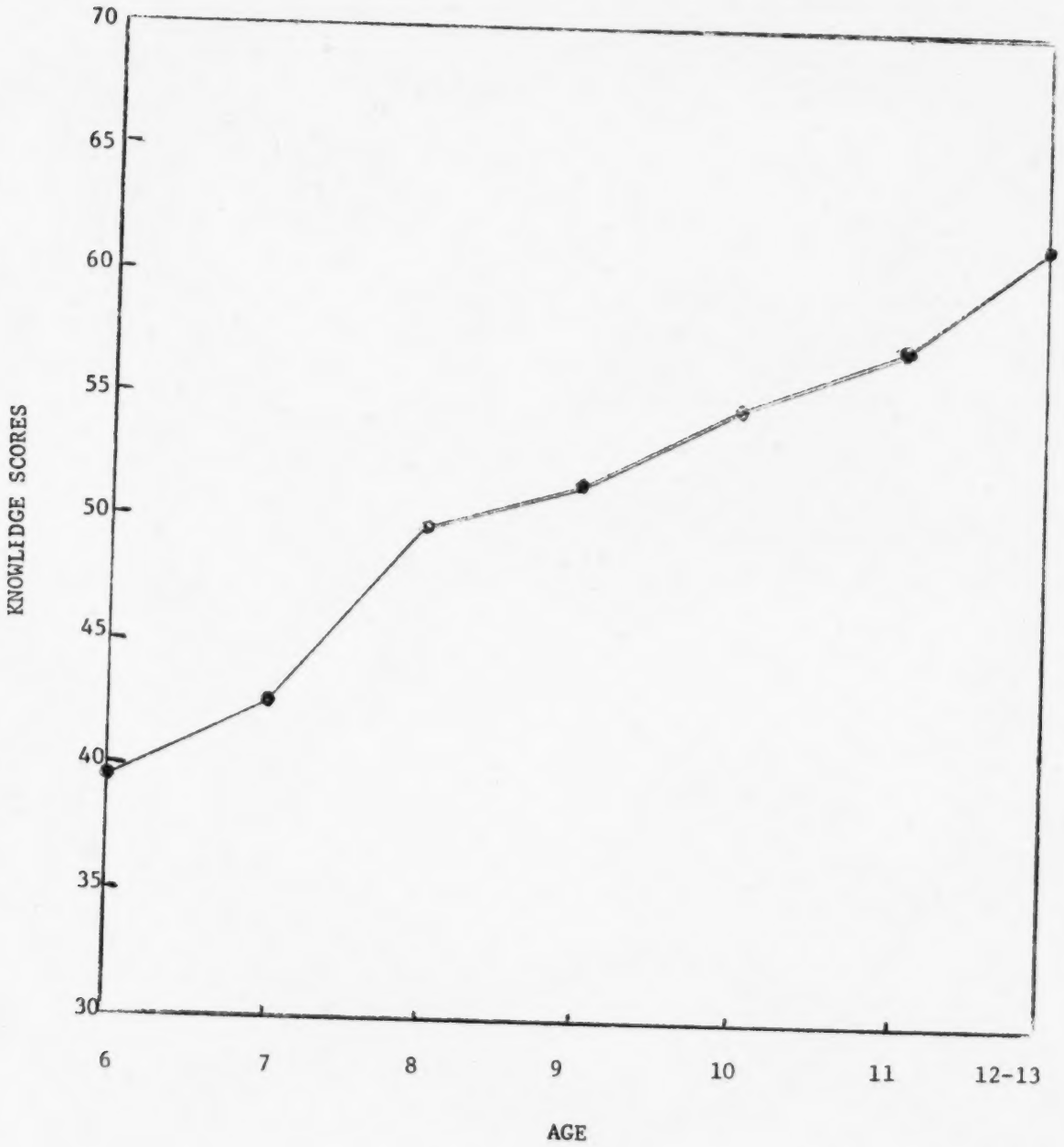


FIGURE 2

MEAN OCCUPATIONAL KNOWLEDGE
(Standard Scores)



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